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CB MAGAZINE

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SEE PAGE 14

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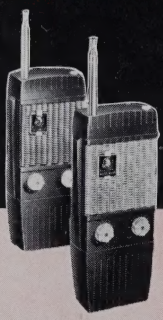

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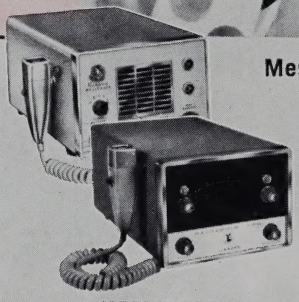

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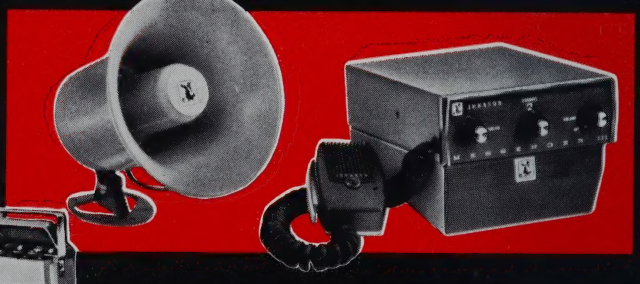

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FEBRUARY 1964
VOLUME 1 • NUMBER 1

CB MAGAZINE

PUBLISHED MONTHLY, ON BEHALF OF THE CITIZENS BAND RADIO USERS OF THE UNITED STATES AND THE WESTERN HEMISPHERE, BY COMMUNICATIONS PUBLISHING CORPORATION, OKLAHOMA CITY 6, OKLAHOMA.

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TABLE OF CONTENTS

Darkness to Dawn 4
Washington Journal 9
Serving the Public 11
CB Remote Control Head 14
End Vibrator Failure in CB Mobiles 22
CB and the Nassau Tourist Race 26
Drake M-523 Report 29
Antenna Specialist MR-58 32
Gizmotchy Antenna Report 33

6 ..... Editorial
7 ..... Letters to the Editor
9 ..... Washington Journal
11 ..... Shop Notes
29 ..... Engineering Reports
37 ..... CB Scope
39 ..... Classified
40 ..... Humor in Radioland

OUR COVER

This month's cover is a picture of a remote control head for Citizens Band Radio. Mr. Chuck Overstreet constructed his remote control head from a few spare parts and a Kaar Citizens Band Transceiver. Note the compact manner the channel selector switch and the squelch and volume controls are mounted. Complete story and pictures on page 14.

NEW!

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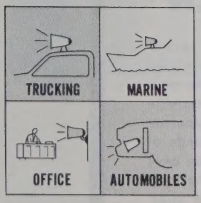

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* Under present rules part 19.32 the FCC does not provide for more than (5) watt input in the Citizens Radio Service (26.965-27.225 MC Band)

DARKNESS TO DAWN

In every great endeavor occasionally there comes a time when tragedy strikes. We here at Communications Publishing Corporation have witnessed such a tragedy at CB Horizons.

As the building that housed this publication burned, this writer watched the disaster with dismay.

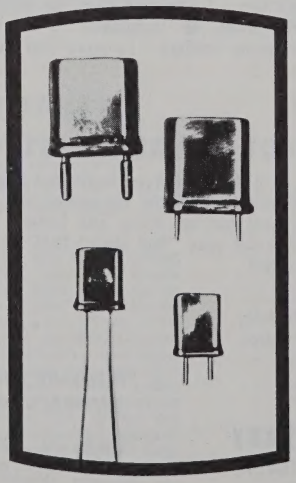
But. . . out of disaster usually comes something better, and the something better is "CB", the new monthly magazine for Citizens Band. "CB" HAS AGREED TO TAKE CB HORIZONS SUBSCRIPTION LIABILITY AND SO ALL CBH SUBSCRIBERS WILL BE RECEIVING "CB" TO FULFILL THEIR SUBSCRIPTIONS.

As time flashes by in our busy industry, "CB" will stay a few minutes ahead of it with the best up-to-date coverage in the CB world.

So, even though we mourn the loss of CB Horizons, we look to the future with "CB" which will be bigger and better than ever.

JK GOLDEN LINE

CITIZENS' BAND CRYSTALS



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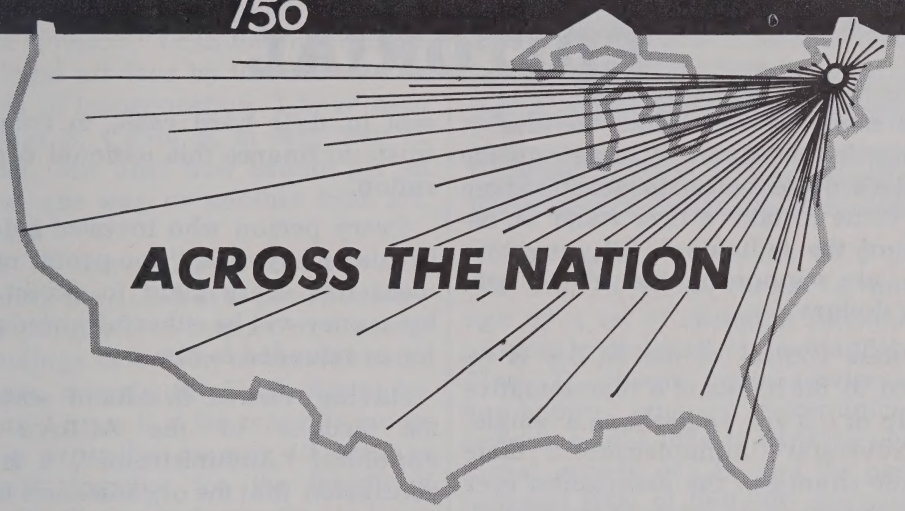
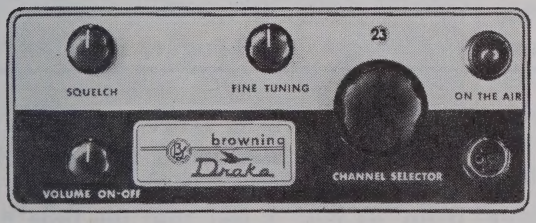


Browning Service Centers are operated by conscientious people who have a sincere interest in Citizens Band Radio. They are at your service to provide you with spare parts, repairs and Browning equipment sales. We invite you to visit your Browning Service Center soon and see the complete line of CB base station and mobile equipment on display. *Please write us for the name of the one nearest you.* If there is no Service Center in your area, we will be happy to fill your requests direct from the factory. Remember: Investigate before you invest. It will pay you to learn all the facts about Browning *before* you buy any CB radio equipment!

Don't settle for anything but the best . . . insist on BROWNING, now manufacturing the nation's most complete line of CB transmitters and receivers!



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10-8

EDITORIAL

As much as we dislike the idea of getting involved in a dispute with the ACBA's present management, the time has come to take a firm stand on behalf of the individual CB operators who are supporting the ACBA with their dollars.

Unless control of the ACBA is restored to the hands of a representative group of CB'ers, rather than a single, controversial "Administrator", there is little chance of the association ever accomplishing its original worthwhile objectives.

As a non-profit organization dedicated to the improvement of Citizens Band radio for the benefit of CB'ers, we would back the ACBA 100%. But until we become convinced of the validity and sincerity of the ACBA leadership we shall be compelled to speak out on behalf of fair play for the CB'ers across the land who have sent in their hard cash, in complete trust, to finance this national organization.

Every person who invested a dollar in this or any other "non-profit" movement has every right to expect that his money will be either fully accounted for or refunded to him.

Having viewed first-hand some of the actions of the ACBA's self-appointed "Administrator", it is our conclusion that the organization is not being run in accordance with normally accepted standards and procedures of a non-profit corporation. We hope that we will not have further occasion to mention the management of the ACBA until the day arrives when we can say, "at last this national organization's leadership is working solely for the benefit of the ACBA members and all Citizens Band operators."

Pat Pogue, KEG 2276

Press Release
January 2, 1964

To all ACBA members:

As Charter member #146, I have always felt that all of us should have the right to a periodic accounting of how our dollars are being spent. It seems strange to me that the original by laws, officers and aims of our association should be radically changed without the vote, knowledge, or consent of all members, therefore, I have taken the liberty on behalf of my fellow members to request a financial statement through the United States Postal Inspectors office, under laws covering funds solicited by mail. Not having received any correspondence from ACBA, I feel that the time has come for all of us to learn whether or not to continue our efforts towards the growth of an organization that may or may not be representing all of us. I must assume that the collection of monies from dues, sales of pins, decals, red shirts etc. must be considerable and should not be withheld from members.

I have not been able to learn anything regarding the present operation of ACBA other than the fact that the

Post Office Box number is registered to 4343 Hayden Lane, Oklahoma City, which appears to be the home of Robert Cooper. I became further confused when I obtained letters written on ACBA letterhead which were signed "B. Cabot, Legal Advisor" I can find no mention of a legal advisor by this name in the articles of incorporation. I have been told that B. Cabot is, in fact, Mrs. R. Cooper, but until now cannot get an answer one way or another from Mr. Cooper.

Due to this cloud of mystery surrounding the ACBA in its present status, I feel obligated to request and accept the findings of the only unbiased source I know, namely the U. S. Postal Inspector. I hope that the report is favorable in order that we may all continue to work together for the benefit of C. B. It will also be interesting to learn if the so-called office of "Administrator" has been assumed for our benefit or as a commercial venture.

Charles Messenger
KFA - 9236

LETTERS TO THE EDITOR

In this space each month CB will reprint thought provoking and interesting material from our subscribers. We ask that you submit to the CB Managing Editor, P. O. Box 63992, Oklahoma City, Oklahoma, any questions or opinions that you have. Please specify your desire to have them reprinted in our letters to the editors column. Selections of material to be reprinted will be at the discretion of the editor and no material can be returned.

★ ★ ★
★ ★ ★

WASHINGTON JOURNAL

The "scare" which the FCC threw into the CB radio ranks 14 months ago by a set of sweeping rulemaking proposals designed to re-establish the Class D citizens radio service as a non-hobby type of communication operation, did little to curb the phenomenal growth of CB, and the present national total of 560,000 licensees includes more than 200,000 who have gone on the air since the release of the proposed new rules.

Despite heavy attack by the critics of the rule proposals, and general unrest in the CB fraternity about them, then, the service as a whole has obviously not been hurt. Nor do we think it will be when the Commission within the next few months, comes out with its final set of rules on the service.

Some changes? Certainly! Progress? We hope so! A stronger service? We think so!

Let's take a minute to review the original proposals, which now look, perhaps optimistically, like they will become final rules some time during February or March.

They were proposed by the Commission to combat conditions which the agency said indicated that "misuse of citizens radio station operating privileges is so prevalent in some areas as the threaten the continued usefulness of the service." The proposals, the

CB MAGAZINE

The Magazine of Citizens Band Two-Way Radio

Ever think how important it is to keep abreast of all the current events. Television, radio and newspapers continually bring you up to date on the history making events around the world.

"CB," the magazine of Citizens Band two-way radio users, also keeps you posted on history making events in the CB world by reporting . . .

The latest news stories
The latest technical information
The latest CB Club news
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Commission said, were designed "to maintain and improve the usefulness of the citizens radio service."

Now, after whole new complexes in the communications field have been set up to either oppose or support the rule proposals, after thousands of comments have been filed with the Commission with respect to the rule changes, after missions of bitter words have been exchanged on the subject, the Commission is about to adopt a final set of rules.

The FCC created the citizens radio service. Is it going to kill it? We hardly think so. And the 200,000 new licensees since the rule proposals were issued are 200,000 good reasons why we don't believe the CB field considers itself dead.

We know the people at the FCC administering the citizens radio service to be good and conscientious public servants, and we admire the restraint with which they have faced some of the attacks against them as a result of the rule proposals they issued to accomplish what they felt was a worthwhile result for the country.

Looking at the proposals specifically, the FCC's own summary of the "most important steps proposed" in mid-November of 1962, was that:

"(1) Since most of the infractions" in the CB service "have occured during communications between stations of different licensees (as contrasted with communications between units of the same station), additional limitations would be placed on such communications but not on intra-station communications. Thus, out of the 23 frequencies now available to class D stations, only five would be available for inter-station communications. Inter-station communications would be restricted, with specific exceptions for public or civic events and other special conditions, to those necessary for the efficient management of a business of household or for control of the movement of vehicles or persons. Time limitations on the permissable length of such communications are further abbreviated.

"(2) In order to obtain a clearer and closer relationship of responsibility between the station licensee and the operator of the equipment, each person operating citizens radio equipment would be required to have his own stations licensed unless an exception is clearly warranted, such as for employees of the licensee or members of his immediate household. So-called unincorporated associations would no longer be routinely eligible to hold a class D station license unless a showing be made that it would not be feasible for the radio operations to be conducted under station licenses issued to the individual members.

"(3) Certain undesirable practices and types of communications would be prohibited as specifically as possible instead of relying on a generalized rule as to permissible or prohibited communications; e.g., transmissions concerning the 'technical performance of equipment' would be specifically prohibited. Communications to 'any stations that might be listening' would also be prohibited. Both these types of transmissions have been involved in the so-called 'hamming' or amateur-type operation in the citizens service. General discussions of social, political or religious doctrine would be prohibited.

"(4) Limitations on the height of station transmitting antennas would be tightened in that if such antennas are mounted on the receiving antenna of another station, including TV antennas, they may not be placed more than 20 feet above the ground or

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man-made structure on which the receiving antenna itself is located."

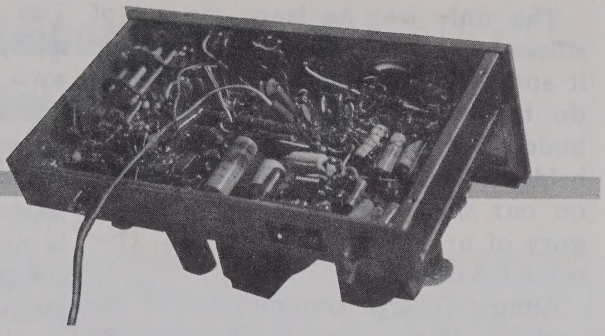
These, then, were the "most important changes" proposed. Undoubtedly, the Commission is shifting its position on some of the points as the results of the comments which the CB field flooded the agency with, and the final rules will be coming out with substantial revisions from the original proposals. This publication does not take the pisition now that the FCC is doing the CB field dirt in its rulemaking proceeding. We're looking hopefully for a set of new rules, and soon, that will, as the Commission promises, "improve" the service.

Fees—CBers, along with other licensees of the FCC, can forget about paying money for the privilege of filing an application with the Commission, at least for the next month or so. A federal court in Chicago has ordered the Commission to "stay" its fee program while the constitutionality of the plan is being thrashed out. The request for court action was made by a group of aeronautical organizations, later backed up by the trucking industry and the broadcasting industry. We'll get word to you as the case develops.

Machine Processing—Best guess at the moment is that the FCC will be putting the processing of CB and amateur licenses on its new computer at the beginning of February, or maybe shortly thereafter. The increased speed in applicant handling should be evident almost immediately, barring major "bugs" in the machinery, and we're told we can look for "one-day processing" some time in the future.

Bob Tall

SHOP NOTES



Let's face it. In the years of Class D CB radio's existence, the service has gotten a black eye with many authorities because of the flagrant disregard of FCC regulations, common courtesy, and good operating procedure which has run rampant upon the band.

But our reputation isn't all black—and one of the most shining spots in CB's brief history is its record in providing emergency communications.

No less an authority than FCC CB chief Ivan Loucks recently held Class D licensees up as a shining example of excellent public service. Speaking to a group of operators from another service in New York City, Loucks said CBer's "have organized themselves into local groups. . . .for all types of local civil defense communications. In addition, they have organized, almost on a national scale, in a program designed to help any part of the traveling public in need of assistance in the towns or on the highways of the nation." Loucks went on to add that CBer's were possibly in one of the best positions of any service to provide local "netted" operation in emergencies.

These are high words of praise, especially coming as they did while the Commission is considering sweeping changes in the CB operating rules.

And those of us who happen to be interested in seeing CB radio survive with all its better aspects will probably want to do all we can to help keep this reputation high.

Which leads immediately to the question: What can we, as individuals, do to help?

There are several things, all of them proven in practice, we can do.

They divide immediately into two major categories: those we can do, all the way, as individuals, and those which we must have the help of others accomplish—or in other words, club projects. Let's look at both.

Starting with the "individual" items, we find again two major points. One deals with the equipment, the other with ourselves.

In the equipment line, each of us should have a complete station capable of operating on any type of emergency power, and which can be readily moved to any spot it may be needed. Our mobile units fill this requirement pretty well, and if they're installed in such a way that they can be removed from the car rapidly (and provided with a spare, separate emergency antenna) will fill it completely.

The part dealing with ourselves may be a bit more difficult. It's simply stated: We must learn to operate efficiently. Many of us are already highly efficient operators. Others tend to just yak rather than getting the message through. □

The only way to learn the art of efficient emergency operation is to give it some practice, and that's hard to do by one's self. With a couple of buddies, though, practice drills can be held—and all of a sudden we're well on our way to the other major category of providing public service. This is the CB club.

Almost every community in the nation with two or more CB operators already has a club of sorts, but it may not be set up for emergency work.

This is unfortunate in two ways. For one, the emergency work which only a club can perform is the most effective public relations possible for the CB cause. For the other, emergency-work practice and organization gives any club a sense of purpose and unity which keeps it more alive than any other "program" tried.

So let's look at the club side of the picture.

A starting point for any club—or individual CBer trying to get an emergency group organized—is to name an Emergency Communications Coordinator (ECC) to head up the project.

This fellow is important, so be sure you name a qualified guy. Just because Old Joe is a good fellow and full of fun doesn't mean he can keep an emergency program going. This spot requires someone with a talent for leadership, and he should also be somewhat of a salesman.

Once you have a coordinator, start a program of planned practice drills. At the beginning, these shouldn't be big affairs with H-bombs, air raids, etc. Make them more true to the emergencies you'll actually be dealing with: lost children, lightplane crash in the woods, brush fire, etc.

At the start, these drills should be strictly on-the-air practice sessions. Use a channel other than that normally used for "yakking" in your area, to keep from creating interference to the fellows who aren't interested and also to keep from starting rumors should someone hear only part of the drill and not realize it is merely practice.

Emphasis at this stage should be put on "net procedure" in which the ECC tells everyone when to talk and when not to. The basic rule is to "speak only when spoken to" by the net control station, and if you have something to report ask his permission before reporting it.

After every drill, participants should meet for a review and critique. Here the ECC should pull no punches; a minor goof during a drill hurts no one, but in an emergency which was real it could cost human life. Any operators who don't want to take it seriously shouldn't get in to start with.

Once all members are operating properly on the air, it's time to go into the field for additional practice. These drill sessions also help the ECC find out just how far his units can communicate with each other, how to fill in dead spots, etc.

Only after all members have proved their capabilities on the air and in a couple of field exercises should the group contact CD, police, and fire authorities to offer their services if and when needed.

Don't be surprised to find authorities a bit reluctant to accept your help. After all, they don't know your capabilities. This is the reason for all the practice **before** approaching them. If the ECC can tell the police chief "I have a list of 100 mobile radio stations and a system for contacting them all within 10 minutes if needed. At our last drill, the final station re-

Continued page 33

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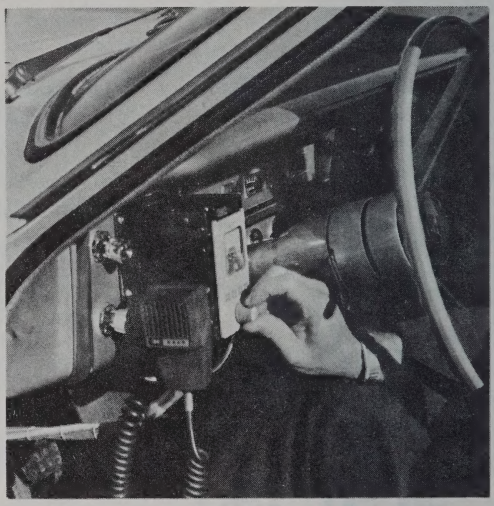
CB REMOTE CONTROL HEAD

—Staff Extra—

With the advent of compact automobiles it is becoming increasingly difficult for the "dyed-in-the-wool" CB'er to first find a place to hang the rig, and secondly, keep the better half happy by not making her fitful with an under the dash knee-knocker installation. Following the squabble with the little lady after the purchase of a new compact the other day, I started thinking of some way to beat this problem. **For some years, taxi cabs and law enforcement vehicles have carried the major portion of their equipment in the trunk. Why couldn't I do that? that?** After looking into the subject further, I discovered this wasn't the great innovation to the industry I thought it might be. A few manufacturers are already marketing such a unit. To my way of thinking, several more will follow suit before too much time elapses. But this was not my answer. I already owned my rig, so my problem was one of conversion. The problem has many solutions. Discussed here is only one which I determined to be the best to fill my particular need.

I started with a Karr Model TR-327 I wanted to move sufficient controls to the driver area of the automobile, but leave the bulk of the unit in the trunk. For the remote control box or the control head, I used a 3 inch by 4 inch by 5 inch aluminum box. I removed the S meter, pilot light, channel selector switch, volume control, squelch control and speaker from the original



chassis. I did not remove the power tuning variable capacitor. This control is seldom used and the added problem of increasing the capacitance in the high impedence circuit by a long length of wire made the movement of this control completely impractical. Let me state at this point, this is the one big problem in a project of this type. All care must be taken to keep all additional wiring to an absolute minimum. It is foolish to mention that every radio is engirneered and constructed to certain specifications, and wanton changes made with little regard to the important item called capacitance can be disastrous.

the control head, I was forced to clip the off-on switch lugs from the back of the original volume control switch. This control was then replaced with a

single throw off-on toggle switch.

At this point, I started the assembly of the control head. The size of the control head box was somewhat dictated by the control panels on the face of the original radio. You will note in the photos, I used as many of the original panels as possible to enhance the appearance of the head. The S meter, pilot light, and channel selector switch were mounted on the right side panel of the head. Here again, I used one of the panels from the original unit. The off-on toggle switch took the place of the old power tuning variable capacitor control. I elected to place within the control head a replacement 3 inch speaker. I first gave some thought to using a rear deck speaker, but felt it more practical to have a complete unit in front and a complete unit in the trunk. Extra do-dads are a bug-a-boo when time comes for unmounting a unit to take to the shop for service. The speaker grille was another panel salvaged from the original unit. On the base of the control head, I placed a 15 contact Jones recessed plug for the control cable and a microphone jack. I also drilled a hole for the power cable which was hooked directly to the automobile off-on key switch. This gives me complete control of the operation of the unit. No key—no operation. The head was then given a couple of coats of black lacquer and set aside.

I elected to use four 12 volt, DC, double pole double throw micro-minature relays to handle the channel switching job of the 4 channels. Here again, it was totally impractical to run the necessary wires the length of the automobile due to the large distribution of capacitance. These relays were small enough to be placed inside the original

unit between the tubes and the outer case. I first used four large encased relays placed on an exterior mounting bracket, but with this arrangement, I had to settle for four channels separated by only ten kcs. For this testing, I selected channels 8, 9, 10, and 11. This arrangement worked well, but I felt I could shorten the leads considerably, thereby cutting the capacitance and use the original enclosure, instead of building another cabinet, by using the micros within the unit itself. After mounting the relays, short wires were soldered connecting the relays to the crystal panels. The contacts on the normal open position of the relays were not used.

A piece of 1/16 inch aluminum was cut to size and placed on the face of the unit. Another 15 point Jones recessed plug was placed in the area originally used by the speaker. A hole was made in the cover panel for the power tuning control and the finger knob replaced. All peaking must be accomplished using this control in the trunk. But, as I mentioned, this control is seldom used, so I felt this would work satisfactorily.

Now to the cable. Actually, three different cables were used. First, a three conductor shielded cable was used for the volume control. Next, a two conductor shielded cable for the microphone, and finally, a ten conductor unshielded color coded cable for the balance of the controls and relays. These cables were soldered to the Jones female portion of the plug in the following manner: Points numbered 1, 2, 3, and 4 were designated for the four crystal control relays. Point 5 was established as the hot lead to carry the DC from the control head to the unit. Six, the audio portion, (the transmit-receive relay in the set cuts the speaker off and on making only one wire necessary). Points 7 and 8, the S meter. Care was taken here via the color coding to make sure the positive and negative connections of the meter were not transposed. Points 9, 10, and 11 were used for the shielded volumn control cable. Point 12 was used for the

squelch control, 13 and 14 were used for the shielded 2 conductor cable for the microphone. Point number 15 was established as a common ground. The shielding from the two shielded conductors were joined together at this point, eliminating the necessity for two ground connections. The same connections were made on the other end of the cable, being careful to check each of the color coded wires so as to not make a transposition of leads. The three cables were then laced together making this portion of the project complete. The finished length of the cable for my installation came to 12 feet 4 inches.

Now to the wiring of the unit itself. The original 12 volt DC power plug was used with the ground side grounded to the automobile. The hot lead with the original line fuse assembly was cut in half and was placed at the control head

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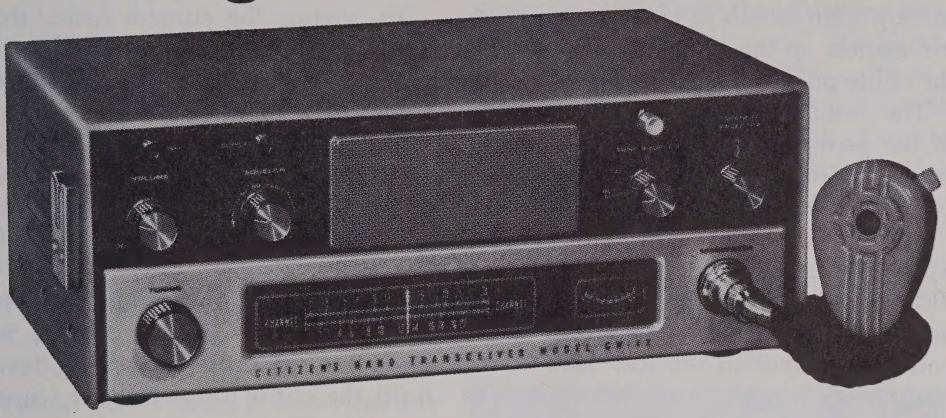

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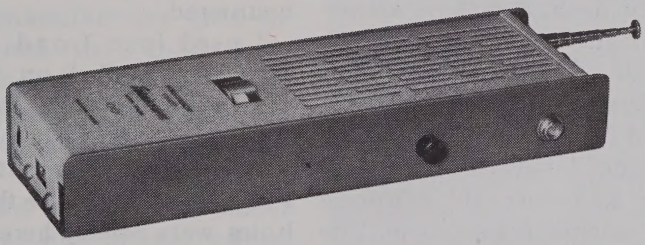

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as previously mentioned, tied into the control head to the off-on toggle switch, through the switch to the channel selector switch, to the pilot light, then on to the cable pug.

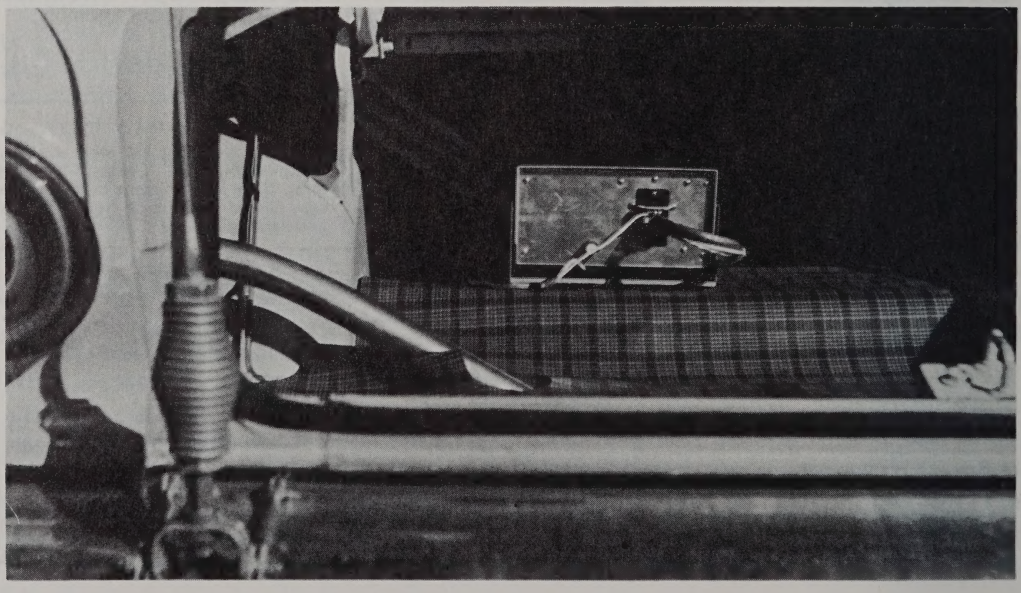
The switch lead on the female portion of the power plug was removed from contact Four and a jumper wire was soldered across points Two and Four.

In the transfer of the volume control from the unit to the control head, the .002 ceramic capacitor, formerly connected from the center contact of the column control to the low side of the volume control, was removed. The capacitance of the cable replaced its value making it unnecessary. The cable capacitance on the squelch circuit was minor considering the .01 capacitor paralleling the control on the original unit. Therefore, nothing was necessary to correct the added cable capacitance. Extreme caution was taken in all additional internal wiring. All hot leads were laced and held close to the chassis and to one side, away from the grid circuit wiring, to reduce any coupling which might be encountered here. The socket terminals for the ground side of the relays were grounded directly to the sockets, thereby, making use of as little wire as possible.

In wiring the control head, the hot lead entered the head through a rubber grommeted hole and was soldered as previously mentioned. One side of the speaker was grounded to the control head itself. The other side was soldered to point six of the control cable. All other wiring was soldered directly to the cable plug.

I found that, due to shock and vibration encountered in driving, it was necessary to build a locking device to hold the cable plugs in their respective sockets. This was done by mounting four solder lugs to the recessed portion of the Jones plug and devising a spring clamp that would hold the cables in place. No further difficulty was encountered.

I used four Lord rubber shock mounts installed on the base of the original enclosure. I felt that the shock encountered in the trunk might be such as to endanger the unit. These mounts, I felt would minimize this danger. Four holes were needed here, but they are in the trunk. With the micro relays, and the cut back of the capacitance, I

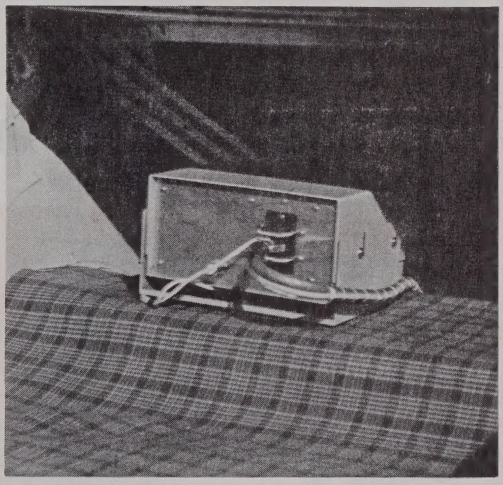


could now use the entire spectrum of the band. I therefore selected channels 1, 9, 11, and 23.

The antenna I used, again at the request of my wife's insistance of "No Holes, Please!", was Antenna Specialist 102 inch stainless steel whip mounted on a stainless steel spring and double-chain bumper mount. I used solder lugs on the antenna end of the coax cable and used a liberal amount of silicon grease in the screw holes as well as on and around the connections. When and if I want to disconnect the coax, I don't believe I'll have any rust problems. The antenna assembly was mounted on the left side of the rear bumper. The coax entered the trunk area from under the automobile through a rubber grommet the manufacturer used for the tail light wires. Here again, bowing to the demand of "no holes".

Before final installation was made, the unit was completely checked out and tuned by a licensed technician friend who found that with the added wiring, there was still sufficient adjustment in the transmit crystal capacitance to tune the oscillator satisfactorily by adjusting to minimum capacitance. Due to the lack of adjustable capacitors on the receiver oscillator, the I. F.s had to be repeaked slightly. Final peaking was accomplished by use of the power tuning capacitor on the rig in the trunk and we were in business. Considering the amount of additional wiring that was involved, we felt we were indeed fortunate to have so few problems in tuning. Proper precautions were made Final check out with SWR/Power meter indicated the unit was well within the proper range.

In mounting the head, I had to break over and drill a couple of holes. So you see fellows, women can compromise. Three holes were needed to make the mounting complete. The head was mounted directly to the left of the automobile's instrument panel. It's handy, small and convenient. The cable was brought in under the back seat on the left side of the automobile. The kick plate along the bottom of the door was removed, the cable installed behind it and then the plate was replaced. The cable was then brought up behind and over the scuff panel by the driver's knee and positioned so as to be accepted by the control head.



The last job was the construction of another cable. This one is an exact duplicate of the one installed within the automobile except, it is only 1 foot 6 inches long. This cable will be used for service only. When the time comes for shop maintenance, the unit, the control head, and short cable go to the shop. The long cable will remain in the car.

Care was taken to properly tune the antenna and I must say, I've been more than pleased with the results of my labors. I can determine absolutely no loss of efficiency of the unit. I receive great! I can put out a mobile signal second to none, and my wife still loves me. Now I ask you—who in his right mind could ask for more than that?

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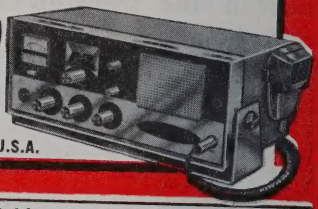

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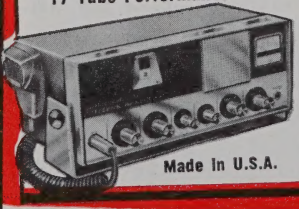

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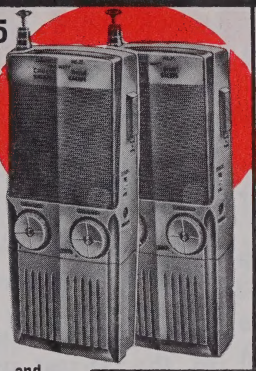

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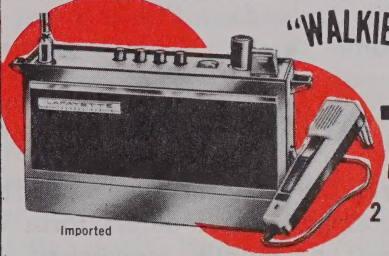

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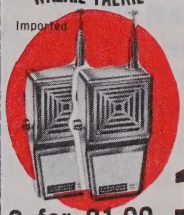

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END VIBRATOR FAILURE IN CB MOBILES

— A staff extra —

The trend in modern day CB transceivers is to transistorized power supplies.

The reason for this is two fold. The more common (and older) form of powering a mobile transceiver is through the use of a gadget known as a vibrator. A vibrator is a mechanical device, essentially, that converts the relatively low voltage level of 6 or 12 volts dc to interrupted DC; that is, a form of AC or alternating current.

To do this the vibrator borrows characteristics from the common door buzzer and the common door buzzer and the common relay. The vibrator consists of a flexible metal "reed," a driving coil (which is a small electromagnet) and two sets of contacts.

At rest one of these contacts is closed. These contacts are connected to the coil and the reed in such a way that current applies to the proper pin on the vibrator base can be passed through the contacts and coil to another base pin on the vibrator.

At the same time current also flows to a third base pin on the vibrator.

When the current flows through the coil the coil becomes temporarily magnetized and pulls the metal reed towards it (the buzzer effect). This breaks the contact in the coil-reed-base pins circuit and stops the flow of the current through both the coil and to the third base pin.

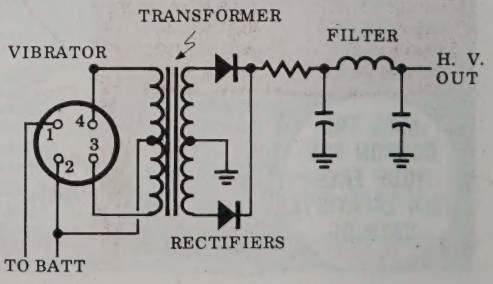
But simultaneously the current that did flow to the third base pin is transferred to the fourth base pin.

With current flow through the coil interrupted, it is no longer magnetized and no longer pulls the reed. The reed and attached contacts fall back to the at-rest position (the relay effect) and the current moves back to the third pin on the vibrator. The cycle now starts all over again.

This is repeated many times each second; most vibrators operate at about 100 cycles per second, which means the complete cycle requires only 1/100th of a second from start to finish.

The useful **output** of a vibrator, called interrupted dc, is taken from the third and fourth pins. They are wired to the primary side of the transformer in such a way that current flows through the primary first in one direction and then the other, changing direction approximately 100 times each second, just as the vibrator changes from "rest" to "operate" positions.

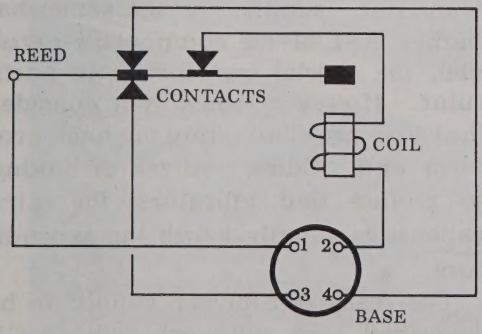
A typical (simplified) vibrator supply circuit is shown in figure one.



The only job the transformer does is to step up the voltage from the approximately 6 or 12 volts of interrupted dc fed into it to the required voltage level for the operation of the transceiver (normally from 200 to 300 volts).

However, the output of the transformer, fed with interrupted dc (a form of ac or alternating current) is alternating current. This must be changed back to dc or direct current before the output can be fed into the transceiver's circuitry. This is done in the rectifier. A filtering network between the rectifier and the actual "high voltage out" connection at the tail end of the power supply smooths out any ripples left in the output voltage in the form of ac or alternating current that may have escaped through the rectifier itself. The output, after filtering, is now known as "pure dc."

From this description of the workings of a vibrator, it should be obvious that we are relying on a mechanical operation, one that takes place on the average of 100 times per second, to convert out 12 volts (or 6) dc into something that can be used to power the transceiver.



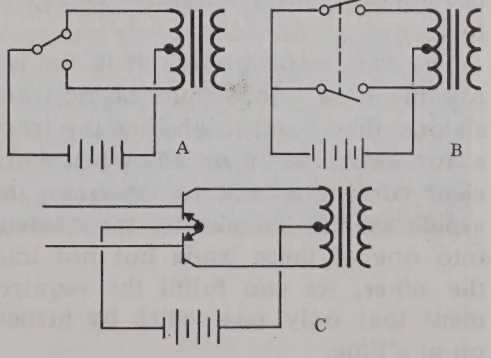
As with any mechanical devices, the rate of failure is high. Quick-math tells us that in an 8 hour operating span a vibrator will vibrate 288,000 times! In a five day week the same 8 hour per day vibrator clicks back and forth 1,440,000 times.

There aren't many mechanical devices around that will stand up to that kind of pressure. In actuality a vibrator is a pretty amazing example of perseverance.

But it is still mechanical, subject to failure, sticking reed (s), objection to operation in very cold weather—and—a vibrator, being akin to the door bell buzzer, is a small spark gap transmitter as well. The poise sympton known as vibrator hash has been pretty well contained from most modern transceivers, but it still exists to a measureable and objectional extent.

The major components in a transistor supply are the two transistors, a special transformer, the rectifier and the filter. Of these the rectifier and the filter are almost identical to the units found in most vibrator type supples (and in fact some vibrator supply components can be used in a conversion). Unlike the vibrator, which can be broken down as a grouping of isolated components, the transistor supply being electrical in function and nature must be viewed as a circuit—not unlike a transmitter or receiver circuit.

The operation of the transistor supply can best be understood by going back to the vibrator supply.



In this illustration we have replaced the vibrator contacts with a single-pole double-throw switch—and actually, that's all the vibrator is, except that the vibrators switching is automatic at the rate of 100 times per second.

With the switch in the position shown in 3-A, the current will flow from the battery through the switch to the upper half of the power transformer primary, **down** through the winding to the center-tap and back to the battery.

When the switch is thrown to the other position, current flows to the lower half of the transformer primary, back **up** through the winding to the center-tap and back to the battery.

Notice that the current flow changed from **down** to **up;** and this is the major function of the mechanical reed-vibrator.

The one double-throw switch could be replaced by two ordinary single-throw switches, if you rigged them up so that only **one** of them would and could be on at a time. This circuit would look like 3-B.

And this is where the transistors come into the act. Under proper operating conditions, the power transistor can be made to function like an ordinary single- pole single - throw switch.

So by hooking up the pair of transistors in place of the two switches, a circuit like that shown in 3-C is developed. This eliminates the vibrator.

The two leads going off to the left are the **base** connections of the transistors; they control whether the transistor switch is on or off. When sufficient current is sent to the base, the switch is off. By putting the current into one of these leads but **not** into the other, we can fulfill the requirement that only **one** switch by turned on at a time.

The current for the bases is taken from another winding on the **special** transformer. When the supply is operating, one transistor turns "on" and lets current flow through the transformer. This flow, in turn, induces current in the special base winding which keeps the **on** transistor on, and holds the **off** transistor off. When the transformer becomes saturated (ie. all of the current that is going to flow), the base current begins to drop off, turning the **on** transistor off and allowing the **off** transistor to turn on.

When the switchover begins, it automatically speeds itself up and in a real fraction of a second the on and off roles of the transistors have been reversed.

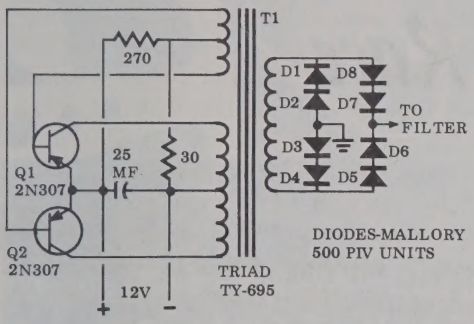
This then repeats the cycle which continues as long as the supply is operating. This type of supply operates at a cycle-speed of about 2,000 cycles per second (cps), compared to the 100 cycles per second of the vibrator supply.

The much faster operation means that a smaller transformer can be used to handle the same amount of power, and it also allows extreme simplification of the filter circuit.

The major dis-advantage with the transistor supply is the somewhat higher cost of the components involved, the special transformer in particular. However when you consider that you are eliminating the hash problem and ridding yourself of having to replace bad vibrators, the extra expense is usually worth the expenditure.

The transistor power supply to be described here will work with all CB transceivers replacing the existing vibrator supply, **except** those transceivers which utilize auxiliary negative bias lines. Use of this power supply with transceivers which have negative vol-

tages indicated on the schematic will result in improper transceiver operation.



A schematic for our transistor supply is shown in figure 4. The unit can be built on a 3 x 4 x 5 standard chassis with plenty of room to spare.

Diodes D1 through D8 should be as specified with the schematic. Use of lower than 500 PIV units may result in failure due to reverse voltages.

Transistors Q1 and Q2 must be insulated from the box as far as the electrical path is concerned, while still maintaining good heat transfer-contact (transistors in this type of circuit generate considerable amounts of heat). We recommend using special anodized aluminum washers to make an electrical insulated contact that gives heat-conducting for the transistor as well. The washers are available at supply houses and are manufactured by Workman TV Products.

After you have wired the supply and checked all connections (a wrong connection can destroy **both** transistors faster than you can disconnect power), hook it up, keeping your fingers clear of the high voltage output side. The unit should emit a clearly audible whine, which indicates correct transistor operation.

Now disconnect the power and short the output terminal with an insulated

Continued on page 35

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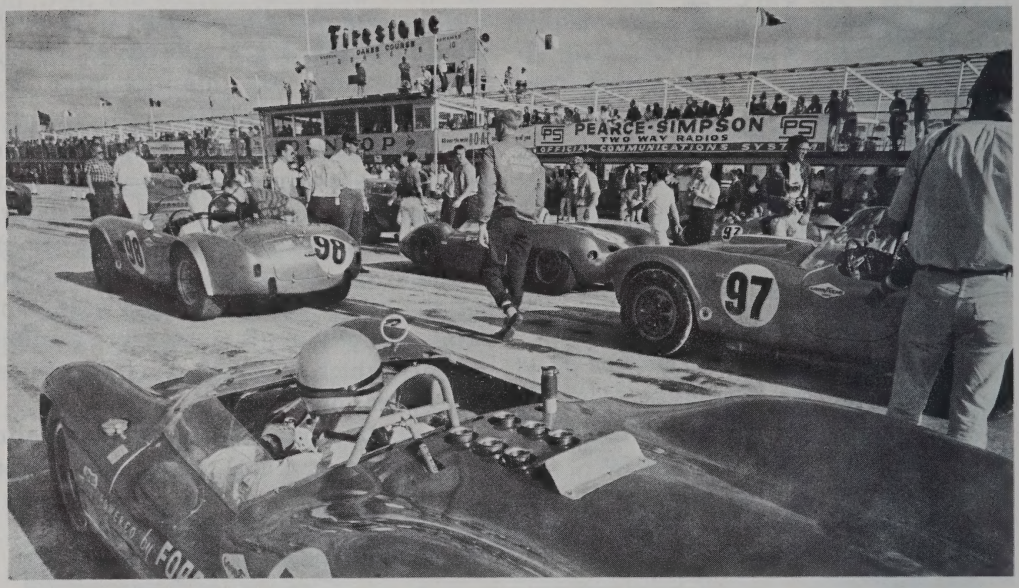
CB and the Nassau Tourist Race



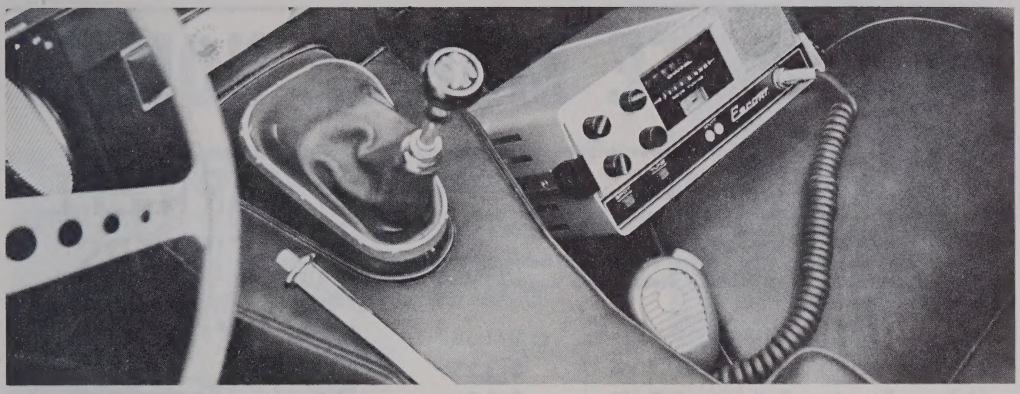
Nassau, Bahamas — Preparation for trials gets underway at the tenth annual Bahamas Speed Weeks run at the Oakes Field Race Course in Nassau.

Citizens Band radio again comes to the forefront with its use in the Nassau Tourist Race held at Oakes Field in Nassau. Scheduled as a Grand Touring Event only, this race is one of the most popular on the program with top drivers from all classes in open competition.

This race is the feature event of the two weeks of fun and racing in Nassau. The Grand Touring Event is run on a 4.5 mile track and is completed after a total of 250 miles is racked up. A purse of over $40,000 is posted for the events.

The racing event was covered by ABC's Wide World of Sports, several movie companies and most of the prominent magazines. Pearce-Simpson, manufacturers of Citizen Band Radios, was appointed the official communications system and placed fifteen Pearce-Simpson Citizens Band Transceivers at ten Mobile stations located at turns around the track and in three strategically located ambulances which were also placed in the most dangerous turn areas. These ambulances and the ten stations were in constant contact with the control tower. In addition, the official pace car was equipped with a Pearce-Simpson escort.

Mr. Len Haas, Sales Manager of Pearce-Simpson, reports that the system functioned reliably and efficiently for the full seven day race. Nassau, Garden spot of the Caribbean and home of the world famed International Speed Weeks makes a splendid backdrop for our venture into a new use for CB Radio.



Nassau, Bahamas — The Pearce-Simpson Escort is shown mounted inside the pace car used during Bahamas Speed Weeks.

Television and Radio played a big part in the annual press coverage of the speed weeks events and many thousands of feet of film, showing both the racing action and the play periods. CB also played a big part in this grand race by providing the necessary communication functions.

This is just one more example of how Citizens Band Radio can do the job required and do it well.

So, if you happen to be in Nassau next December, which is a mere 185 miles from the mainland of the United States, take along your CB Radio and listen in on the thrills and excitement of the fabulous Nassau Grand Touring Race. □

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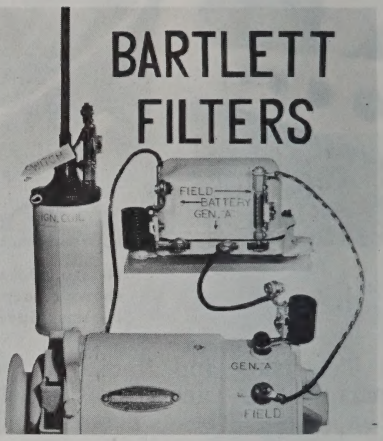

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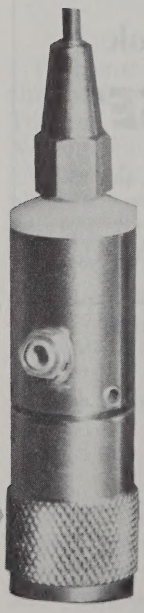

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BROWNING M-523 DRAKE

In anybody's book, the Browning M-523 Drake transceiver must be a highly desirable item.

As a transceiver, it offers crystal control on all of the 23 channels, ultra-compact design, transistorized modular power supply, separate speaker box and the long time-proven history of Browning efficiency and reliability.

In addition to these more obvious features, the Drake includes a Public Address function (3.0 watts of audio for loud-hailing, addressing crowds, etc.), provision for addition of tone-squelch (selective calling), provision for adding a plug-in S meter, complete pi-network loading and on-off control of the noise limiter as well as fine vernier tuning of the receiver's crystal controlled channels.

Our Browning Drake M-523 installation was made in conjunction with our preparation in the Lab of our background material for the new CB Radio Handbook, now available. In fact, part of the installation of the Drake is shown in full color on the CB Radio Handbook cover.

Since the initial installation, the Drake has chalked up 3,500 miles in road travel.

The Drake power supply is a transistorized modular unit that connects to the transceiver with a length of multi-conductor cabling. This allows you to mount the Drake wherever you find it most convenient in your mobile, and then stow the transistorized supply away where there is room and power is handy. Browning recommends you mount the power supply under the dash or against the firewall. We found a convenient spot inside the engine compartment but then learned why Browning recommended that the supply go in the car's interior!

Transistors are still fairly delicate devices, and an engine compartment where summer heat frequently climbs up to 325 plus degrees is no place to house a transisto supply. Transistors have a strange habit of "popping" when subjected to such heats; not to mention the possibility that water or mud migh get splashed onto the supply's terminal-connection strip in wet weather. (We moved our supply inside the car and up under the dash in short order.)

Despite the ultra-compact size of the Drake (8 by 9 by 3 inches), it is a fully tubed transceiver. The only transistors are in the companion power supply.

In all, the unit has 10 tubes. Five of these are in the receiver section (a 6BS8 cascode rf amplifier stage, followed by a 12AT7 crystal controlled oscillator-triode mixer, 12AT7 second oscillator-mixer and a pair of 6BA6's operating as if amplifiers at 455 kc); five are in the audio section and transmitter deck. The transmitter final is the rugged 5763 pentode, good for a full 5 watts for a long-long time. The 5763 is driven by a 6EA8 that oscillates in the triode section and then multiplies in the tetrode portion.

The mechanical design of the unit builds the transceiver around a pair of long-thin chassis; one holding the receiver, the other the transmitter-audio section. The wiring is done towards the center of the unit, and all tube tops face towards the cabinet sides. This approach leaves all tubes "laying on their sides" but the end result is an ultra-compact unit.

The audio for the unit, on either receiver or transmit, is handled by a pair

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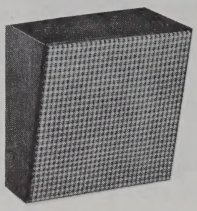

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of 12AX7's that include mike amplifier and then audio driver applications. The modulator, a 6BQ5, applies both plate **and** screen modulation to the 5763, resulting in a better balanced and higher average level of modulation.

Although crystal synthesis is not altogether new, the method Browning uses to make their crystals function on both transmit and receive is worth mentioning.

On transmit, the **first** conversion (receiver) crystal controlled oscillator, operating on 22.365 megacycles, is beat against the frequency of the **second** receiver conversion oscillator. The second conversion oscillator operates in the 4.600 to 4.890 megacycle region, and it is the sum of the particular crystal chosen from this range and the 22.365 megacycle first conversion oscillator that gives you one of the 23 CB channels. For example, 4.600 and 22.365 megacycles is 26.965 mc, or channel 1, and so on up the line.

On the receive function, the process is reversed, with the 26.965 channel 1 signal and a 22.820 megacycle signal beating together in the first 12AT7. The **difference** of the two is 4.145 megacycles, which passes down to 455 kc in the second 12AT7 when the frequency 4.145 megacycles (in the case of channel 1) is beat against crystal frequency 4,600, resulting in 455 kc which the first if amplifier (a 6BA6) accepts after proper filtering in if transformer T3.

The process may be complicated, but the fact that a full 23 channel crystal controlled transceiver requires but 23 crystals for actual operation on transmit and receive, plus a pair of crystals on 22.820 and 22.365 megacycles for the synthesis part of the circuit, should not be. That's economy for the operator and compactness for the builder!

The M-523 Drake, to this point, has been discussed as a mobile unit. It should be pointed out that a companion ac supply, operating from 117 vac, makes the unit into a base station rig that occupies less space than "War and Peace" on your table top.

Browning has all matter of accessories for the Drake, including an S meter, a mobile mounting bracket and two speaker assemblies. One assembly, the A-330, includes a wire sound tonal control pot assembly with which you may cut off

the highs or lows of the audio signals as they enter the speaker. We found this extremely convenient when we were working with weak signals that included a multitude of stations, each with differing nasal voice characteristics. On a woman's voice, we cranked the tone response back into the base region, since female voices have higher "highs" output than male voices. On male voices we reversed the procedure and set the tone control where we accented the highs and cut back on the lows. This sounds like a simple enough procedure, but we found it extremely helpful in making 10-2 copy out of weak signals as the patter stepped around from station to station.

A second accessory speaker features a 4 inch 3.2 ohm cone that requires a box about twice the size of the A-330. Of course this results in better base audio response, but you like us may find that the four incher is simply too big to fit into the mobile, and reserve it for base use.

Tune up on the Drake is straight-forward. Since it includes pi-network transmitter coupling, you load it up for maximum with the pi control, dip the final tuning for maximum output, and then repeat the procedure until you have either gone as far as the controls will allow, or have reached five watts input, which ever comes first.

With the power supply provided, it is difficult (if possible) to exceed 5 watts input. With 5 watts in, 3.2 out seems par across the channels. We did find that output varied from 2.9 to 3.4 watts on the high end, from channel to channel, independent of transmitter tuning, indicating that some crystals had more drive than others.

Modulation limits itself around 95%, and you can hollar until you are blue in the face, it won't overmodulate.

We consistently were able to work 35-40 miles mobile to base over gentle rolling terrain, even with hills between us and the base station. The transmitter and receiver seemed to be well matched for we could work anything we heard, and never received reports of being heard where we couldn't hear. On several occasions, traveling south into Fort Worth or Dallas, we found it no problem to work 50-60 miles mobile to base, as we came south out of Oklahoma. And this at 70 miles per hour!

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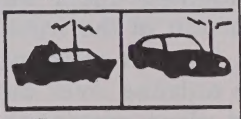

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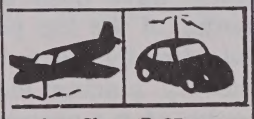

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ANTENNA SPECIALISTS M-58

More than 18 months ago the antenna people at **Antenna Specialists, 12435 Euclid Avenue, Cleveland, Ohio** introduced a new fiberglas antenna (one of several) dubbed the MR-58.

The MR-58 is a 4 foot overall fiberglas construction loaded whip coated with AS/P's particular brand of black sheathing that makes the antenna virtually impregnable when it comes to water or dirt getting in and spoiling the performance of the mobile whip.

The MR-58 is more than simply a four foot fiberglas whip however. The antenna includes a dandy "under the lid" mount, 15 feet of RG-58/U, and connector. In other words, it is a complete mobile antenna system ready to go.

We mounted the MR-58 on the rear fender for evaluation purposes. It could have been mounted under the center of the top portion of the trunk lid, directly behind the rear window, thereby placing the antenna over the center of the ground plane center surface of the mobile. But we chose to settle for the side mount as a more "typical" installation for our evaluation.

So, we slipped it under the forward portion of the driver's side of the trunk lid, drilled two miniture holes, and secured the mount. Next we adjusted the slide-portion of the mount to bring the base of the mount out away from the trunk lid (you loosen and tighten two bolts), ran the coax into the trunk between two pieces of foam rubber (one on the underside of the lid, the other in the trunk groove, giving the coax a cushion of foam between the two mating pieces of metal), and then down behind the rear seat, under the floor upholstery, under the front seat, under the front flooring and then up and out under the dash.

Since the end of the 15 feet of cable is already outfitted with a PL-259 male coaxial connector, it took just a matter of seconds to attach an SWR meter in the line, key the transmitter and measure the results.

The SWR read 1.25 to 1, very satisfactory for a shortened mobile antenna mounted in this position.

Next we left the SWR bridge in the coax line and set out to test the sway of the MR-58 on the highway.

The fiberglas rod is rigid enough to stay **almost** vertical right up to 70 MPH. Thus the SWR doesn't do much changing (usually resulting from the whip swaying to and fro about the car body) even at highway speeds.

Mounted as it was on the left rear section, we expected the antenna to adopt directional characteristics, which it did. Signals coming in from either side of the direction of travel were down 9-12 db from signals coming in from the front of the car. Signals off the rear of the car were about the same as off the sides.

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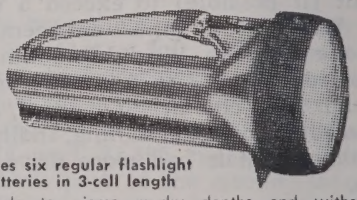

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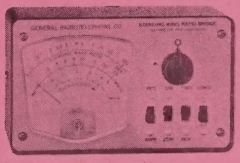

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DRAWING RULES: Enter by simply filling out the self-addressed post card below, and mail it to us before **FEBRUARY** 10th. The winner's name will be drawn, notified by mail, and announced on the inside front cover in General's April ad.

Drawing void in any locality or State where prohibited by law. Federal, State and Local Government regulations apply.

Prize winner will be selected in a random drawing conducted by Stanley R. Rader, Certified Public Accountant. Its decision, with respect to all phases of the drawing, will be final.

Entries limited to residents 18 years of age and older, of the United States and Puerto Rico. Employees and their families, of General Radiotelephone, General Dealers, Stanley R. Rader, Certified Public Accountant, and General Radiotelephone Company's Advertising Agency are not eligible.

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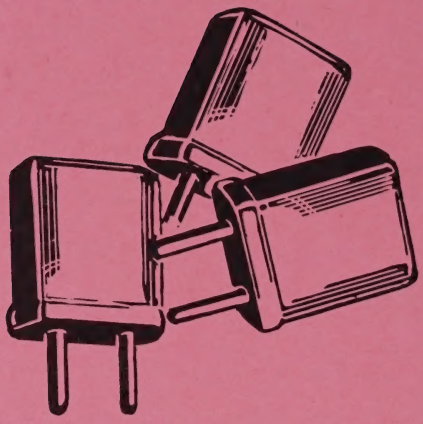

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GENERAL RADIOTELEPHONE COMPANY

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UTICA GIZMOTCHY BEAM

The Gizmotchy beam is manufactured by the folk at **Utica Communications Corporation, 2917 Irving Park Road, Chicago 18, Illinois.** Utica has been turning out this dual purpose beam for about two years now, having acquired the rights to it from its original builder Marina Communications, Inc., then in Los Angeles.

The Gizmotchy began in Los Angeles and it was designed to solve several problems CB'ers there had. It is reasonably squat when erected (about 12 feet), allowing it to be erected on a short mast about the roof and still be legal; it has the unique feature of offering either vertical **or** horizontal radiation from a single antenna, making it ideal for the system that uses horizontal antennas for base-to-base point to point communications **and** vertical polarization for base to mobile communications.

The dual polarization is accomplished through the incorporation of a unique twin-gamma-match feed system that connects one transmission line to a vertical element and another transmission line to a horizontal element.

You bring both lines of coax down to the rig, run them through a switch (also available from tica) to select one or the other mode (vertical or horizontal) and then to your transceiver.

For those who have yet to experience horizontally polarized base to base communications, a word here. 70 percent of all background noise on the 27 megacycle CB band is essentially vertically polarized. By using horizontal antennas on **both** ends of a circuit, the antenna noise pick up (from power lines, automobiles, etc.) is reduced by as much as 70 percent.

And this means, simply, that you can enjoy longer range reliable communications, as a rule, using horizontal polarization.

At this point someone might ask why we don't use horizontal polarization for base to mobile work, then. The answer is (to date) much simpler than the question. No one to date has developed an adequately effective horizontal polarized mobile antenna that is small enough to mount on the average vehicle.

Back to the Gizmotchy. The antenna has the general appearance of a giant spider come to rest. It is a three element vertical beam, and a three element horizontal beam all rolled into one. The vertical part of the beam consists of the straight up and down vertical section above the boom, and the two drooping horizontal/vertical elements. This is akin to three letter Y's, **upside down,** made out of aluminum tubing, and mounted on a common boom.

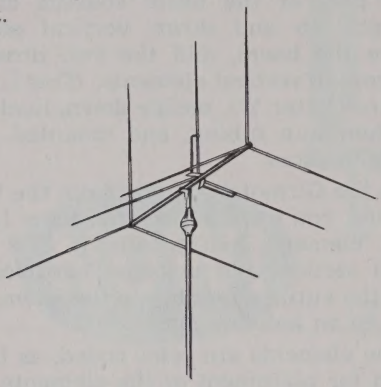
As the Gizmotchy comes from the Utica factory, you have 9 element pieces (3 for each element configuration), a 9 foot boom section, and assorted hardwear to lash the entire assembly to the boom, and then to an antenna mast.

The elements are color coded, as is the boom for placement of the elements, and this makes assembly of the Gizmotchy difficult to do wrong. Element lengths are pre-set at the factory (although it is always a good idea to measure them after completing assembly and checking the lengths against the chart provided), as are the two gammamatches.

The coax (RG-8/U or Belden low loss 8214 attached to the base of the appropriate gamma match

In as much as the completed beam is 9 feet long and 12 feet high, 12 feet wide (with the spread of the elements), you might have some difficulty in getting the completed array on to your tower or mast. In our case, the Gizmotchy went at the 60 foot level on a Business Band communications tower, with the vertical ground plane of the BB system above the Gizmotchy. The Gizmotchy driven element (to which the coax attaches) and the director mount ahead of the clamp where the antenna bolts to the rotating mast, and it is advised that if you are mounting a second antenna above the Gizmotchy that you mount the Gizmotchy and the second (higher) antenna on a piece of stout oaken dowel (1½ inch diameter or larger) the rotor will accept. If you run a metal antenna mast up by the Gizmotchy to support the second BB antenna above the Gizmotchy, the proximity of the metal mast to the Gizmotchy driven element will de-tune the Gizmotchy severely. An oaken dowel will not have this affect.

We found it necessary to assemble each of the three Gizmotchy elements on the ground, and then haul them to the top of the tower on a rope-sling individually, where they were fitted to the boom which had already been attached to the wooden mast.



Incidentally, the U-clamps that come with the Gizmotchy will not accept masts large rthan 1⅛ inches in outside diameter, so if you use a larger diameter mast, you will need to substitute larger mast clamps (available at the local auto supply store as "muffler clamps") and drill new holes in the mast-to-boom mounting piece.

Utica recommends that you use two separate feedlines, one for the vertical and one for the horizontal sections of the beam. We suggest that you run your two separate feedlines only as far as below the rotor, and then use an outdoor coaxial relay (available from **Dow Key** or **Bay Roy Electronics)** to switch a single line coming up from the transceiver to either the vertical or horizontal section of the antenna. You power the relay with a weather-insulated run of twisted pair, using 117 volts ac from the house circuit. This eliminates having to invest in two identical lengths of low loss coax (which is usually more expensive than the relay), an it also saves you from having to invest in the manual switch that mounts down at the transceiver, not to speak of not having to drill holes in your shack-wall for **two** separate feedlines.

In operation, the Gizmotchy performs like most beam antennas. It is pre-tuned for a VSWR of 1.4 to 1 or lower, and if you don't disturb any of the factory settings, it should stay that way when you put it up. You will notice that when switching from vertical **to** horizontal operation, your receiver background noise drops off considerably, again the result of less noise pick up with horizontal antenna system. The Gizmotchy exhibits a better radiation pattern on horizontal than on vertical. The front to back ratio on vertical is around 15 db, while on horizontal it is nearer 20 db. The front to side ratio is 22 db on vertical, nearer 30 db on horizontal.

Utica has recently brought forth extra element "power-packs" for the Gizmotchy, allowing you to add extra director elements to the antenna for increased gain and directivity. This should be especially appreciated for vertical polarized work, where the extra directivity is most needed. The power packs are available for making a 4 or 5 element beam out of the original three element design, and may be added at any later date the user wishes. Our evaluation did not include the use of the power-pack addition.

Price of the Gizmotchy complete with the vertical and horizontal gamma matches is near $60.00. For those who want only the vertical operation, this is available at lower cost. □

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All CB orders should include make and model of equipment and whether for transmit or receive. Send M.O., Check or Cash with order. Sorry, No C.O.D.'s Accepted.

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MONOWHIP, a monopole type 8' whip $13.95

OCTOPUS, a double half wave base antenna $32.50

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screwdriver. A spark across the terminal to ground connection indicates dc in the capacitor. Connect a 0-500 voltmeter across the output and turn the unit on again. No load voltage should read from 300 to 350 volts.

Connecting this unit to your transceiver, replacing the existing vibrator supply, includes the following: **disconnect** the existing connections at the cathode end (output) of the tube rectifier (or silicon rectifiers) and **connect** the positive terminal of the power supply in place of the existing rectifier (s).

Fire up and measure your operating voltages on the plate of the final amplifier and at several known voltage spots in the transceiver receiver. If your voltages are more than 5% **above** those specified, add the appropriate value of dropping resistor in the power supply line after the filters and before the first voltage connection internal to the transceiver, to bring the voltages back down to a proper value for specified transceiver operation.

Installing the transistor supply, in its separate chassis box, may be a temptation as far as the motor compartment of the vehicle is concerned. We do **not** recommend installing a transistorized supply in the motor compartment because of the extreme heat generated by most engines. It is not at all uncommon in modern vehicles for the heat in an enclosed engine compartment to exceed 300 degrees, a most dangerous temperature level for transistors to operate under.

We recommend that the transistorized supply be bolted up under the dash or against the fire wall in your vehicle from the inside compartment, not the outside. □

CITIZENS CB BAND IN ACTION!

NEW FOR '64

2-WAY RADIOS

the "ESCORT" and "COMPANION II"

$229.95

NEW "ESCORT" Features

- Illuminated—8 fixed channels, tunable to receive and transmit 23 channels with external crystal socket—illuminated "S" meter and slide rule tuning dial—all transistor power supply.

Every transceiver is hand-wired, quality controlled along the production line and individually tuned and tested before it reaches you. Dependability is built in for long years of rugged service.

$189.50

NEW "COMPANION II" Features

- Illuminated—5 fixed channels, tunable to receive and transmit 23 channels with external crystal socket—illuminated slide rule tuning dial — all transistor power supply.

NOW—AT YOUR DEALER

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Name.....
Address.....
City..... State.....

PEARCE-SIMPSON, INC.
MIAMI, FLORIDA

CB SCOPE

Review of New Products & Services

NEW COMPANION II

Pearce-Simpson, Inc., 2295 N.W. 14th Street, Miami, Florida has announced a brand new model of their popular Companion series transceiver, the "Companion II."

Highlights of the new unit include an all transistor universal power supply (117 vac and 12 vdc), 5 crystal controlled transmit and receive channels plus 23 channels tuneable, external transmit crystal socket, illuminated channel selector and an illuminated sliderule dial. The transceiver also includes all hand-wired circuitry and an aludized (r) aluminum chassis for weather protection against rust and corrosion. The unit has a jack for plug-in addition of an accessory S meter, covered relay for dust protection and external coupling for antenna matching.

The unit weighs in at 12 pounds and measures 12¼ inches by 8¾ inches by 5 inches. The price, $189.50, includes one pair of crystals, and a quick disconnect universal mounting, de-mounting bracket.

RAY-TEL TWR-4

The Raytheon people have announced a new version of their popular Ray-Tel series, the TWR-4 transceiver.

The TWR-4 has a built-in S meter to indicate transmitter and receiver performance and is pre-wired with an external socket to accomodate selective calling attachments.

Six crystal controlled channels are offered in the transciver. Operation is from standard 12 vdc or 117 vac.

A new larger speaker, mounted "up-front" brings better readability for weak signals, according to the manufacturer.

Price on the new unit is $179.95. Full details are available from **Distributor Products Division, 55 Chapel Street, Newton 58, Massachusetts.**

KNIGHT C-555

Alled Radio Corporation, through their Knight-Kit division, has a new lightweight hand-held transceiver that sells for $19.95.

The 100 milliwatt unit weighs 15 ounces, and measures 7 by 3⅛ by 2 inches.

5 transistors and 1 diode make up the circuit, which features a super-het receiver design.

The speaker is a 2 incher and the unit includes a 40 inch telescoping antenna. Power comes from a standard 9 volt dc cell.

Full information is available from **Allied at 100 North Western, Chicago 80, Illinois.**

TG-093 100 MILLIWATT HAND HELD

A spurt in sales has forced the folks at Concord Electronics, Los Angeles, California, to greatly increase production on their model TG-093 100 milliwatt transceiver.

The TG-093 features a "unique telescopic antenna with built-in loading coil" that "greatly increases the effective range of the 100 milliwatt unit."

The unit is constructed as a complete die-cast metal pocket-sized unit, and features an accessory ac power supply for base station operation.

In the 100 milliwatt class, the Part 15 unit requires no license to operate.

Full information on the TG-093 is available from **Jack Cardenas at Concord, 809 N. Cahuenga Blvd., Los Angeles 38, California.**

HEAVY DUTY BUMPER MOUNT

A new heavy duty bumper mount designed for attaching two-way mobile antennas to the bumpers on late model vehicles has been introduced by the people at **Webster Manufacturing, 317 Roebling Road, South San Francisco, California.**

Made in its entirety from metal that cannot rust, the Band-Spanner H-215 heavy duty mount is versatile and adapts itself to any number of complex modern-day bumper profiles.

A special extra-long stainless steel strap with a worm type adjustment permits the mount to be installed on vehicles where the clearance between bumper and splash pan is scant.

The bumper mount accepts all standard ⅜ inch — 24 butt antennas, the brass whip socket is secured to the bracket with a sturdy ⅜ inch stud.⅛

Price on the new unit is $14.20. Full details are available from Webster's **Jim Adams.**

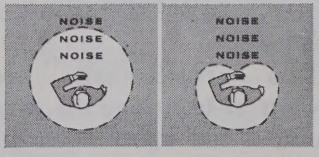
Electro-Voice Model 717 Noise-Cancelling Microphone $11.70 CB User Net

Plug a new E-V 717 into your transceiver and get up to 15 db more protection against noise pickup. Not just big noise, but every sound that reduces the effectiveness of your signal. Even the effect of poor acoustics is reduced by the 717.

How does the 717 cut down on lost messages, repeated calls and wasted time and money? It has a sound-cancelling port on the back that rejects sound arriving at the rear of the microphone. Random noise pickup is reduced up to 67%.

How does the 717 sound? Crisp, smooth and peak-free for highest efficiency and articulation. There's plenty of output for any transceiver on the market. And *no noise!* But don't take our word for it. Test the new E-V 717 on your rig today. We guarantee you'll like how you're heard. Electro-Voice, Inc., Dept. 1132CB, Buchanan, Michigan

HERE'S HOW THE 717 STOPS NOISE



Ordinary microphone pickup pattern

E-V 717 noise-cancelling pickup pattern

Electro-Voice®
SETTING NEW STANDARDS IN SOUND

Continued from page 25

ported in nine minutes after my surprise alert. Each station has a reliable range of five miles and all of them are mounted in automobiles. Each operator is a qualified first-aid instructor and we have been devoting 6 hours a week to practice, to be able to help in any sort of emergency. Would you like our cooperation whenever needed?" then he has a pretty fair set of arguments.

But even so, the police may have tried using volunteers from other places in the past, and they may not want any part of your help. Don't worry about it. See the firemen if your area has brush-fire troubles, or the CD people. And if no one wants your help at first, don't worry. If you're prepared, your chance will come.

And if you prove yourself in action when that chance comes, then you'll have no future trouble.

One public-service project, though not exactly emergency-oriented, which proved highly successful for a club in New England was a "highway patrol" every night of the winter when roads were slick and icy. Each CB mobile carried tow chains, first-aid equipment, and spare lights—together with a large jug of hot coffee.

The mobiles patrolled all the roads of the area, and every time one spotted a car stuck or off the road, stopped to offer assistance. If possible, the CBer pulled the car out himself. If not, he used his radio to call a tow truck.

This project was credited with saving at least one life, when a mobile found a car overturned in a ditch on a little-used road. Authorities agreed the occupant (who was pinned in) would have frozen to death before morning, had not help been summoned by CB radio.

Other such projects, adapted to your own area and surroundings, will undoubtedly suggest themselves. But be sure that you're ready to carry through before starting.

And whatever you do, **don't** barge in on a disaster unless invited. There's no better way than this to get yourself on the authorities' blacklists for keeps. When radio or TV announces that a child is lost, the ECC can contact police and offer help. If he's accepted, fine. If not, everybody stay home! Too many helpers can destroy all chance of locating the lost one, and in any event you'll only lose goodwill instead of gaining it.

Next month, we'll look (in a little more detail) at some specific projects which can be of assistance to a properly organized and functioning emergency group. One will be a completely portable, fully reliable station which can be carried in to any location. We'll also discuss "emergency vans" and their proper place. In the meantime, you get started on your practice and drills—and if you already are, send us some pictures of your crew in action. ◻

ATTENTION:

Please give the "CB Magazine" circulation department four weeks to process your orders for subscriptions. Address all correspondence to, "Circulation Department", P. O. Box 63992, Oklahoma City 6, Oklahoma. Changes of address should be accompanied with an addressed label from a previous copy. Print your old address and your new address plainly.

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CB QSL's. Free samples. Little Print Shop. Box 9401. Austin, Texas.

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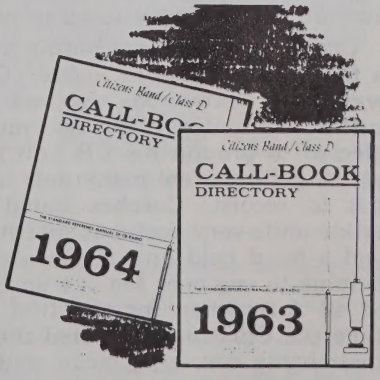
9½ out of 10 CB'ers need a CB Call-Book

Whether you use CB for business or pleasure, you'll find the Call-Books extremely useful. For travel, search and rescue work, or routine communications its a great convenience to be able to identify other stations and obtain names and addresses from your own CB Call-Book. Get the 1963 editions now — while they last!

Order your CB Call-Books today!



HUMOR IN RADIO LAND

This month a tip of our editorial hat to Johnny Wampler, 6W 6509 of Memphis for this editorial out of the MRCBC **(Memphis Radio Citizens Band Club)** News for November 1963.

"While digging through the ruins of an ancient city on the island of Tongazavianoska — Elomakinstine (which used to be Tongazavianosa-Elmoakinstine-Nu, but the new King thought long names were obnoxious) scientists have unearthed what could be traces of a past civilization that could be more complex and ridiculous than our own. Records found scratched in ancient walls clearly show that the first CB unit was invented by Fenwick Furslugger, in the year 500 B.C. This discovery tends to astound the modern mind until it is learned that Furslugger's unit was a very crude, single channel job with a barn door/ **type** broad received. (*Actually, the barn door was not invented until much later when a young cowboy found it cumbersome driving his herd into the barn through the window.) This unit was so crude that it even failed to make as high as a "poor" rating in any category when tested by a **popular** magazine. This same budding young genius Furslugger later invented the automobile because he didn't want his 12 volt power supply to go to waste.

CB in those days was hardly more than a toy in the hands of a few (Ceaser, it was later discovered, was not really a sufferer of epilepsy, but had merely neglected to ground his CB unit.) As the art of CB'ing grew many new uses were put to record. Coaches found walkie-talkie units very useful at sporting events and a hand held unit is given credit for helping to engineer the 5-4 upset victory of 40 A.D. when for the first and last time the Christians defeated the lions in their home den, er, I mean stadium.

The new uses of CB eventually expanded to the housewife. Now she could call her husband on the way home from a hard day at the slave market and have him pick up a pound of palmagranits and a skin of Yak's milk. CB was about to become of age in those pre-civilization days of life when an event took place that the records can't quite explain. Incomplete records, scratched on a stone tablet, read something like this: 'Effective tomorrow all antennas above 20 feet must come down; no more chit chat or visiting. And you can't talk more than three minutes on with a five . . .' and there the records break off for the stone tablet was cracked." □

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POLYTRONICS

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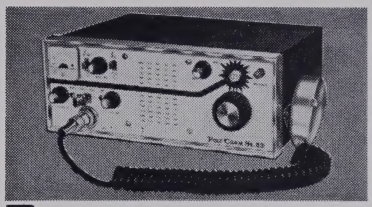
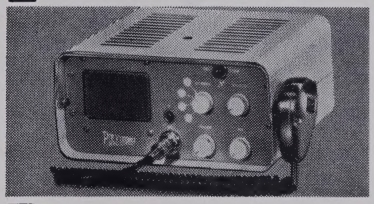
First 23 channel all crystal controlled citizens band transceiver utilizing "frequency synthesizing" circuitry. Built-in tone filter for selective calling, S-meter and output indicator, also serves as P.A. system.



☐ POLY-COMM SR. 23 $349.50

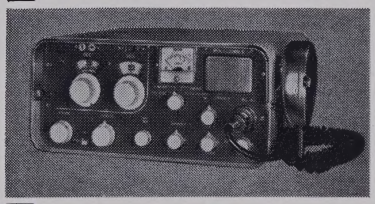
ST IN PERFORMANCE

4 channel crystal controlled citizens band transceiver with Nuvistor rf stage. 17 tube extra rugged, performance.



☐ POLY-COMM "N" — $189.50

Super-sensitive 6 meter transceiver, illuminated S-meter, dual Nuvistor rf amplifiers, 14 tubes, 7 diodes, VFO, .1μv sensitivity.



☐ POLY-COMM "6" — $329.50

CHECK POLY-COMM®

first in communications

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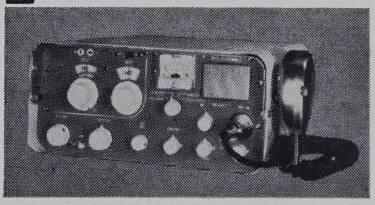
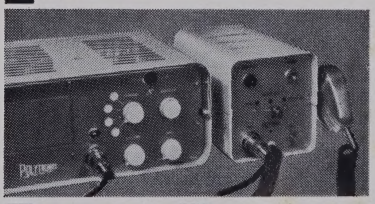


☐ POLY-COMM "2" — $349.50

ST IN DESIGN

Poly-tuner provides ultra-stable 22 channel variable tuning and illuminated S-meter for all Poly-Comm transceivers. Poly-call selective listening tone control squelch encoder and decoder plugs into any "N" unit.



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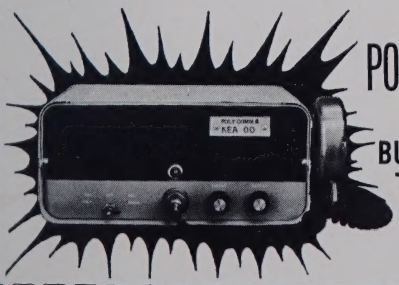

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